

Date: Monday, 23/02/2009 3:54:39 PM  
 User: Linda Lacelle

## Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services		Drawing Name	: BRACKET ASSEMBLY		
Job Number	: 46030			Part Number	: D3183043	
Estimate Number	: 10281			Drawing Number	: D3183 REV C1	
P.O. Number	:			Project Number	: N/A	
This Issue	: 23/02/2009		S.O. No. :	Drawing Revision	: C1	
Prsht Rev.	: NC			Material	:	
First Issue	: / /		Type :	MACHINED PARTS	Due Date	: 10/03/2009 Qty: 10 Um: Each
Previous Run	: 42193					
Written By	:					
Checked & Approved By	:					
Comment	: Est Rev:Pick:A 04.02.18 New issue KJ/DS Est Rev:B Changed Mat Size 08-06-26 JLM Verified By:EC					

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :	
1.0	M174B1500X02250	17-4 SS Bar 1.50 X2.250	
		Comment: Qty.: 0.4812 f(s)/Unit Total : 4.8122 f(s) Material: 17-4 SS Bar per AMS 5604/5643 (M17-4-B1.500x02.25) Identify for D3183-043 Batch: M10839 DJP 09/02/28	(10)
2.0	BAND SAW	BAND SAW	
		Comment: BAND SAW Cut blanks: (1.500" x 2.250") 5.500" long	(10) DJP 09/02/28
3.0	HAAS1	HAAS CNC VERTICAL MACHINING #1	
		Comment: HAAS CNC VERTICAL MACHINING #1  1-Machine D3183-3 as per Folio FA322 and Dwg D3183 Identify as D3183-3  2-Deburr  3-Scribe batch number	(10) J.L MWF 09/03/07
4.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE	
		Comment: INSPECT PARTS AS THEY COME OFF MACHINE	J.L MWF 09/03/07

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3183-043 PAR #: Fault Category: Prod/Machined Parts NCR: Yes No DQA: Date: 09/05/06  
 Resolution: SCRAP Disposition: SCRAP QA: N/C Closed: Date: 09/05/06

NCR: 46030		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
09/03/02	3.0	I <sup>st</sup> part had wrong Origin On 4Axe. Took the origin from the wrong folio.  R.c: operator error.	J 09/04/02	- Scrap & destroy.	DJP 09/03/02	J 09/03/07	J 09/04/02	J 09/03/02

NOTE: Date & initial all entries

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Drawing Name: BRACKET ASSEMBLY

Job Number: 46030

Part Number: D3183043

Job Number:



Seq. #: Machine Or Operation:

Description :

5.0 QC8 SECOND CHECK



EF 09/03/07

Comment: SECOND CHECK

6.0 D3121-21 Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 20.0000 Each(s)

Pick:

Qty Part Number Description Batch

2 D3121-21 Bolt B46032X17  
B46739X3

EF 09/03/30

7.0 D3183045 Bearing Assembly



B47551(3x)

Comment: Qty.: 2.0000 Each(s)/Unit Total : 20.0000 Each(s)

Pick:

Qty Part Number Description Batch

2 D3183-045 Bearing Ass B46031 B46393(17x)

EF 09/03/30

8.0 SMALL FAB 1 SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

Assemble D3183-043 as per Dwg D3183.

EF 09/05/05 (10)

9.0 QC5 INSPECT WORK TO CURRENT STEP



S 09/05/05 (10)

Comment: INSPECT WORK TO CURRENT STEP

10.0 PACKAGING 1 PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: \_\_\_\_\_

57236

C 9/05/05 (10)

11.0 QC21 FINAL INSPECTION/W/O RELEASE



09/05/05 (10)

Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



MF 09-05-05

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	46230
Description: Bracket	Part Number:	D3183-3
Inspection Dwg: D3183	Rev: C1	Page 1 of 1

### FIRST ARTICLE INSPECTION CHECKLIST

First Article     Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
R0.190	+/-0.030	.190	✓			
R0.063	+/-0.010	.063	✓			
0.182	+/-0.010	.183	✓			
0.070	+/-0.010	.071	✓			
0.100	+/-0.010	.103	✓			
Ø0.201 x 0.100	+/-0.010	.195x.102	✓			
0.182	+/-0.010	.184	✓			
5.32	+/-0.030	5.319	✓			
5.036	+/-0.010	5.037	✓			
2.120	+/-0.010	2.120	✓			
1.290	+/-0.010	1.289	✓			
0.365	+/-0.010	.365	✓			
0.218	+/-0.010	.216	✓			
1.030	+/-0.010	1.030	✓			
1.90	+/-0.030	1.890	✓			
1.012	+/-0.010	1.014	✓			
Ø0.201 x 0.100	+/-0.010	.205x.103	✓			
0.786	+/-0.010	.779	✓			
Ø0.392	+0.002/-0.000	.393	✓			
R0.19	+/-0.030	.190	✓			
3.954	+/-0.010	3.955	✓			
0.162	+/-0.010	.163	✓			
R0.19	+/-0.030	.190	✓			
R0.25	+/-0.030	.250	✓			
4.26	+/-0.030	4.262	✓			
2.080	+/-0.030	2.110	✓			
1.155	+/-0.010	1.155	✓			
0.162	+/-0.010	.166	✓			
0.36	+/-0.030	.360	✓			
0.615	+/-0.010	.620	✓			
0.435	+/-0.010	.436	✓			
0.200	+/-0.010	.206	✓			
0.381	+/-0.010	.390	✓			
0.032	+/-0.010	.030	✓			

Measured by:	JL	Audited by:	BB	Prototype Approval:	N/A
Date:	09/03/03	Date:	09/03/07	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	03.11.12	New Issue P/O D3183-043	KJ/RF	
B	04.03.15	Changes as per revision C	KJ/JLM/RF	
C	06.03.09	Dwg Rev update	KJ/JLM	
D	08.01.28	0.182 dimension removed	KJEC/DD	BB

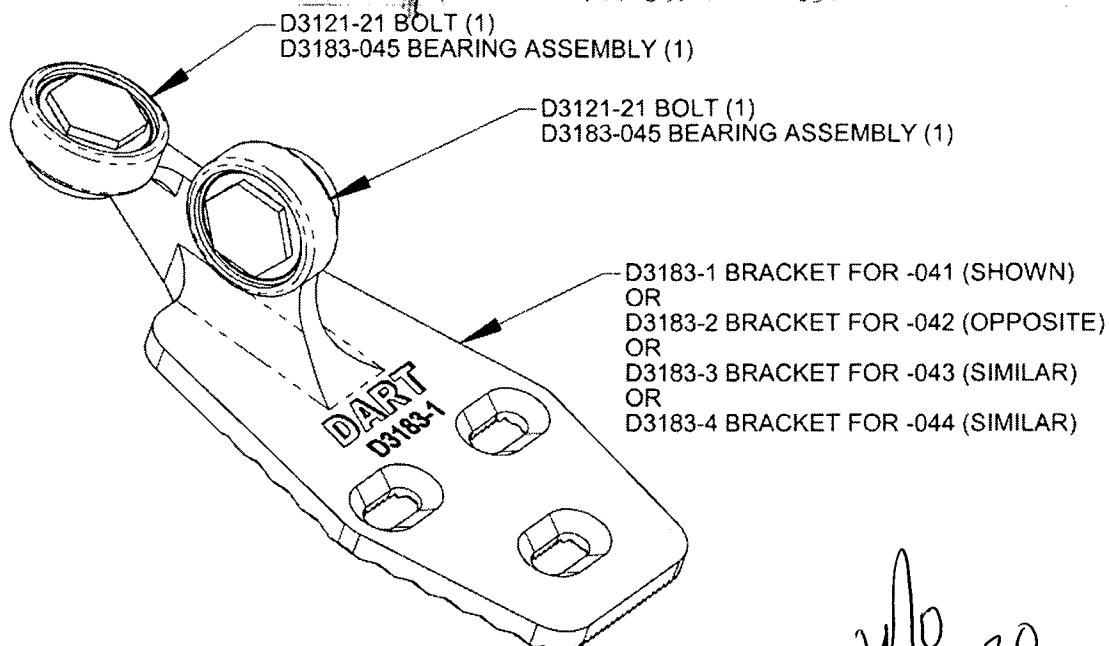
**DART**

DESIGN	DRAWN BY	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO. D3183 REV. C SHEET 1 OF 4
DATE	04.02.17	TITLE SCALE <b>BRACKET ASSEMBLY</b> 1:1

**RELEASED**  
04.03.01

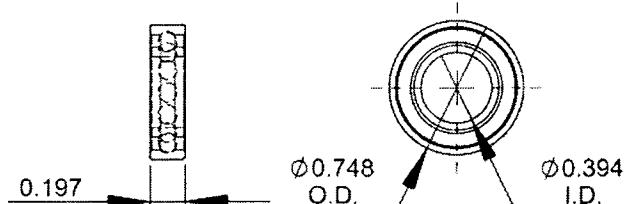
A	03.01.24	NEW ISSUE
B	03.06.17	REMOVE BEARING; 1.012 WS 0.882
C	04.02.17	ADD -045/9; 0.182 WAS 0.431

C1 - 04.02.17 0.182 WAS 0.431



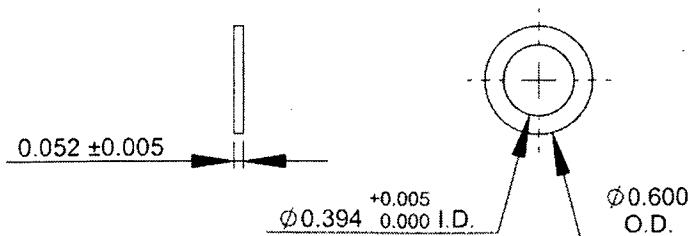
**D3183-041 BRACKET ASSEMBLY (SHOWN)**  
**D3183-042 BRACKET ASSEMBLY (OPPOSITE)**  
**D3183-043 BRACKET ASSEMBLY (SIMILAR)**  
**D3183-044 BRACKET ASSEMBLY (SIMILAR)**

W0  
46030



#### **D3183-5 BEARING: SPECIFICATION CONTROL DRAWING**

- 1) SINGLE ROW, DEEP GROOVE, CONRAD TYPE, SHIELDED
- 2) POSSIBLE SUPPLIER: NSK P/N 6800ZZ
- 3) ALL DIMENSIONS ARE IN INCHES



#### **D3183-7 WASHER**

- 1) MATERIAL: AISI 303 ROUND BAR (M303R) ANNEALED
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

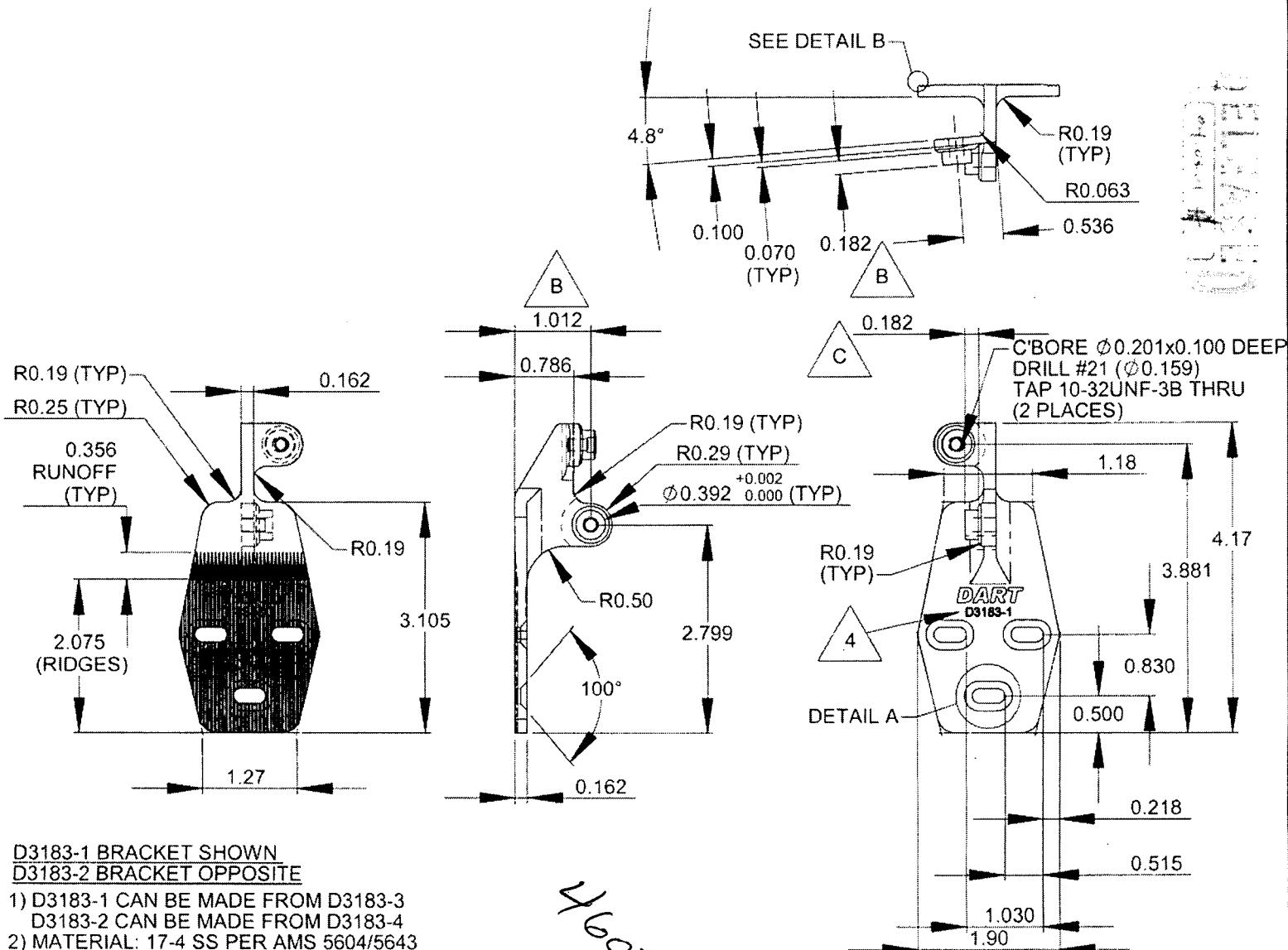
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

**DART**

DESIGN	DRAWN BY	DART AEROSPACE LTD	
CHECKED	APPROVED	HAWKESBURY, ONTARIO, CANADA	
DATE	04.02.17	DRAWING NO.	D3183
		TITLE	BRACKET ASSEMBLY
		SHEET 2 OF 4	REV. C
		SCALE	1:2



D3183-1 BRACKET SHOWN  
D3183-2 BRACKET OPPOSITE

- 1) D3183-1 CAN BE MADE FROM D3183-3  
D3183-2 CAN BE MADE FROM D3183-4
- 2) MATERIAL: 17-4 SS PER AMS 5604/5643  
(REF DART SPEC. M17-4-B)  
MIN ULTIMATE STRENGTH = 150 ksi  
MIN YIELD STRENGTH = 100 ksi
- 3) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 4) ENGRAVE DART P/N & LOGO AS SHOWN
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS  
OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

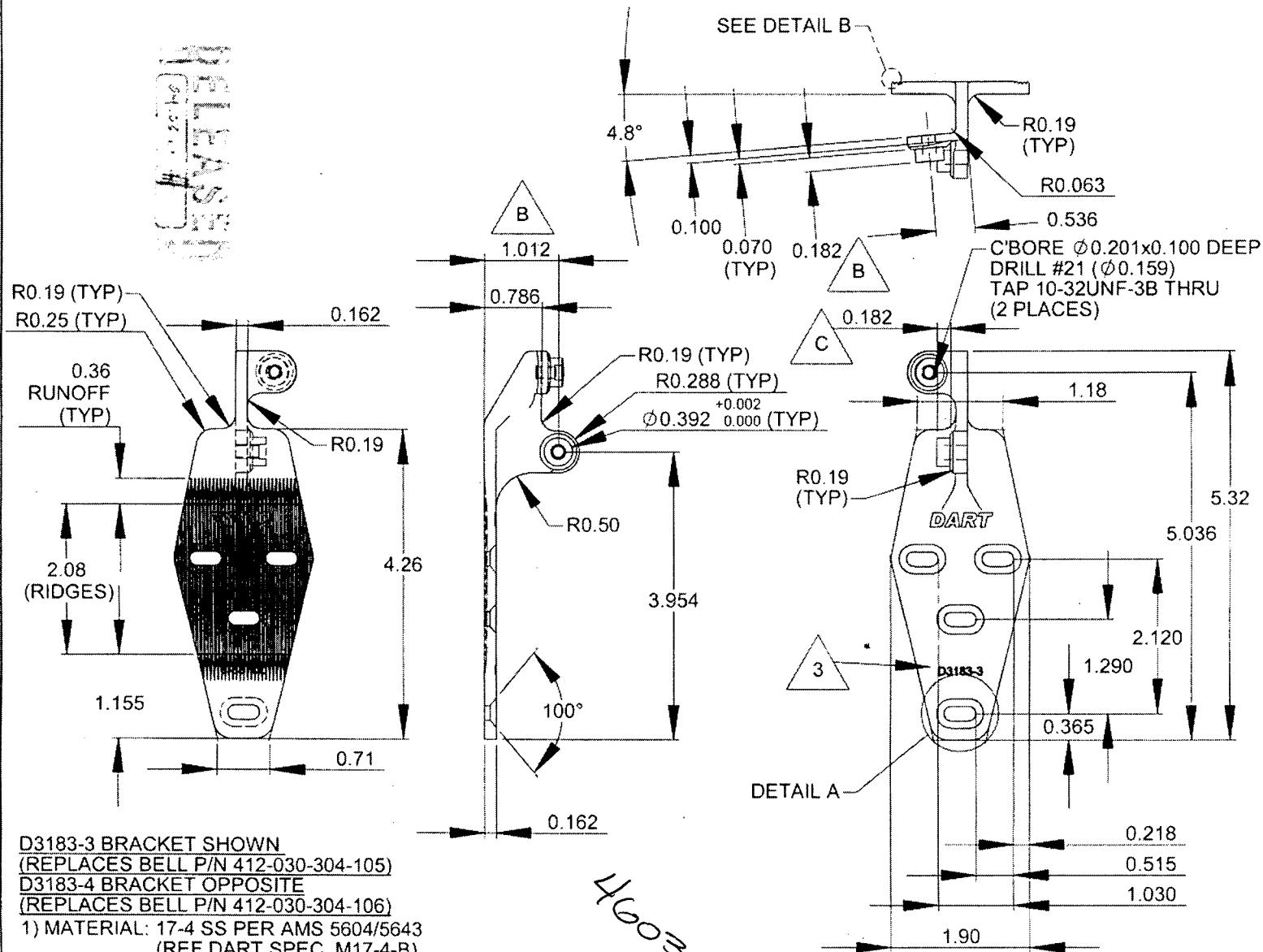
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CHECKED	APPROVED	HAWKESBURY, ONTARIO, CANADA	DRAWING NO.
			D3183
DATE	04.02.17	TITLE	BRACKET ASSEMBLY



D3183-3 BRACKET SHOWN  
(REPLACES BELL P/N 412-030-304-105)

D3183-4 BRACKET OPPOSITE  
(REPLACES BELL P/N 412-030-304-106)

1) MATERIAL: 17-4 SS PER AMS 5604/5643  
(REF DART SPEC. M17-4-B)  
MIN ULTIMATE STRENGTH = 150 ksi  
MIN YIELD STRENGTH = 100 ksi

- 2) BREAK ALL SHARP EDGES 0.005 TO 0.015  
3) ENGRAVE DART P/N & LOGO AS SHOWN  
4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED  
5) ALL DIMENSIONS ARE IN INCHES

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

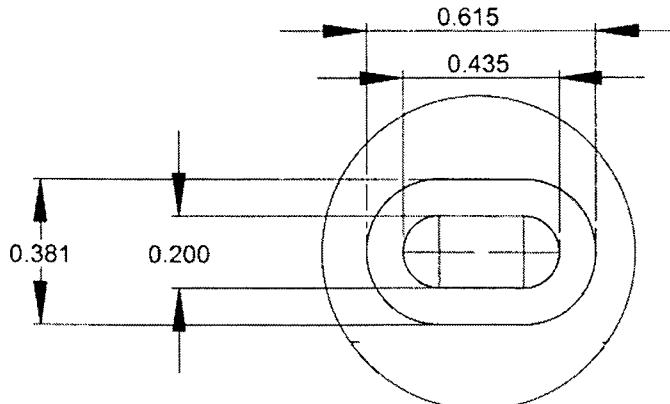
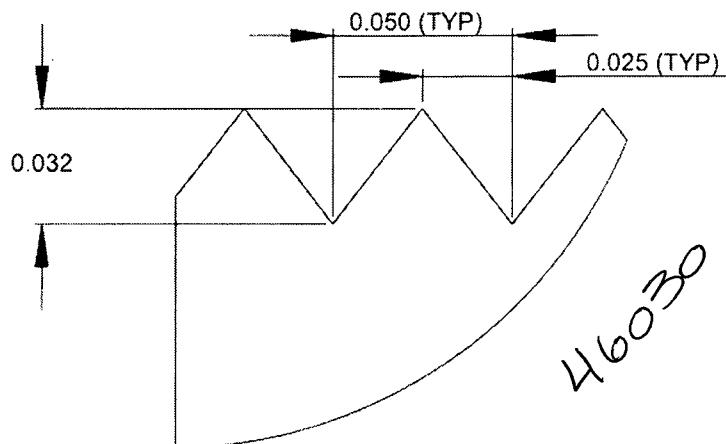
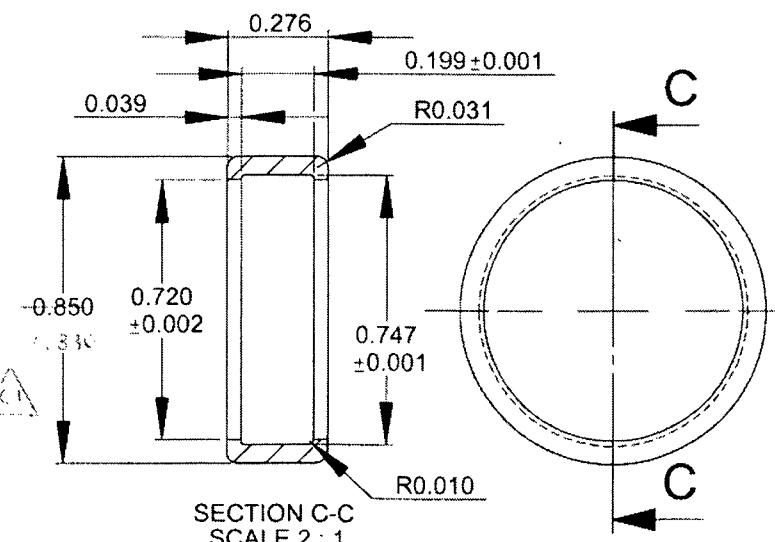
**DART**

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO.	REV. C
DATE	04.02.17	TITLE	SCALE

D3183

SHEET 4 OF 4

1:1

DETAIL A (2 : 1)~~RELEASED  
04.03.01~~DETAIL B (20 : 1)**D3183-9 CAP**

- 1) MATERIAL: DELRIN ROD, Ø1.00  
(REF DART SPEC. M-DELRIN-R1.00)
- 2) TOLERANCES ARE PER DART QSI 018  
UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES

**D3183-045 BEARING ASSEMBLY**

- 1) ASSEMBLE D3183-5 BEARING AND D3183-9 CAP

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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